



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

May 10, 2016

Anne Downs
Senior Registration Specialist
Wilbur-Ellis Company LLC
2903 S. Cedar Avenue
Fresno, CA 93725

Subject: Notification per PRN 98-10 – correcting typographical error in Table 7
Product Name: Vaquero
EPA Registration Number: 2935-559
Application Date: 4/11/2016
Decision Number: 516322

Dear Anne Downs:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped “Notification” and will be placed in our records.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Compliance.

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If you have any questions, you may contact Nathan Mellor at 703-347-8562 or via email at mellor.nathan@epa.gov.

Sincerely,

A handwritten signature in cursive script that reads "Heather Garvie".

Heather Garvie, Product Manager 24
Fungicide and Herbicide
Registration Division (7505P)
Office of Pesticide Programs

NOTIFICATION

2935-559

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

05/10/2016



WILBUR-ELLIS®

Ideas to Grow With®

VAQUERO™

ACTIVE INGREDIENT:

Clethodim*26.4%

OTHER INGREDIENTS:73.6%

TOTAL:100.0%

Contains Petroleum Distillates

*(E)-2-[1-[[3-chloro-2-propenyl)oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one

VAQUERO™ contains 2.0 lb. clethodim per gallon.

EPA Reg. No. 2935-559

EPA Est. No. 42750-MO-001

KEEP OUT OF REACH OF CHILDREN CAUTION

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing before reuse. Wear long sleeve shirt and long pants, chemical resistant gloves and shoes plus socks. Wear protective eyewear. Avoid breathing spray mist.

FIRST AID	
If swallowed:	<ul style="list-style-type: none"> • Immediately call a poison control center or doctor. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give any liquid to the person. • Do not give anything by mouth to an unconscious person.
If on skin:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If inhaled:	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
If in eyes:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
HOT LINE NUMBER	
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact EMERGENCY TELEPHONE NUMBERS: (800) 424-9300 CHEMTREC (transportation and spills) (800) 222-1222 POISON CONTROL CENTER (human health) (888) 426-4435 ASPCA (animal health)</p>	
<p>NOTE TO PHYSICIAN - Contains petroleum distillate – vomiting may cause aspiration pneumonia.</p>	

See inside label booklet for additional PRECAUTIONARY STATEMENTS.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as Barrier Laminate or Viton > 14 mils
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROLS STATEMENTS

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when disposing of equipment washwater or rinsate.

The use of this product may pose a hazard to the federally designated endangered species of Solano Grass and Wild Rice. Use of this product is prohibited in the following areas where the species are known to exist.

Solano Grass: Solano County, California: the vernal lakes area bounded by the Union Pacific Railroad and Hastings Road to the North, Highway 113 to the East, Highway 12 to the South, and Travis Air Force Base to the West.

Wild Rice: Hays County, Texas.

PHYSICAL OR CHEMICAL HAZARDS

Combustible. Do not use or store near heat or open flame.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Read the entire label before using this product. Use strictly in accordance with label precautionary statements and directions.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Chemical-resistant gloves such as Barrier Laminate or Viton > 14 mils
- Shoes plus socks
- Protective eyewear

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Keep all unprotected persons out of operating areas or vicinity where there may be drift. Do not enter treated areas without protective clothing until sprays have dried.

PRODUCT INFORMATION AND INSTRUCTIONS

VAQUERO is a selective post-emergence herbicide for control of annual and perennial grasses.

VAQUERO does not control sedges or broadleaf weeds.

Control Symptoms: A reduction in vigor and growth is evident in treated grass weeds. Early chlorosis/necrosis of younger plant tissue is followed by a progressive collapse of the remaining foliage. Symptoms will generally be observed in 7-14 days depending on grass species treated and environmental conditions.

In some grass species, repeated use of VAQUERO (or similar post-emergence grass herbicides with the same mode of action) may lead to the selection of naturally occurring biotypes that are resistant to these products. A resistant biotype may be present if poor performance occurs and cannot be attributed to adverse weather or application conditions. This potential resistance will most likely occur in fields where other control strategies such as crop rotation, mechanical removal, and other classes of herbicides are not used from year-to-year.

Do not allow VAQUERO to contact desirable grass crops such as corn, rice, sorghum, small grains, or turf, as these and other grass crops will be injured or killed. Minor leaf spotting may occur on treated plants under certain environmental conditions. New foliage is not affected.

VAQUERO is not for use on vegetable crops being grown for seed production unless specific use directions are provided in this label or through Supplemental Labeling.

Not all specialty varieties of vegetable crops on this label have been tested for tolerance to VAQUERO. It is advised that, before applying VAQUERO to specialty varieties of crops listed on this label, crop tolerance should be investigated first using a small section of the field. It is possible that injury symptoms may occur. Symptoms may appear as leaf speckling or stunting.

Best perennial grass control can be obtained if rhizomes or stolons are cut up by preplant tillage practices, (discing, plowing, etc.) to stimulate maximum emergence of grass shoots. Cultural practices, such as continuous no-tillage in which the perennial grass rhizomes or stolons are not cut up, result in a very staggered, non-uniform weed emergence. Under these conditions and due to such non-uniform weed emergence, make no fewer than two VAQUERO applications per year at the appropriate weed-growth stage rate under continuous no-till conditions.

APPLICATION INFORMATION

Application Timing

Apply VAQUERO post-emergence to actively growing grasses according to rate table directions in this label. Do not apply to grass plants under stress from insufficient moisture or cold temperatures, or to grass plants exceeding recommended growth stages as unsatisfactory control may result.

In arid regions where irrigation is used to supplement limited rainfall, VAQUERO should be applied as soon as possible after an irrigation (within 7 days). In arid regions, a second application of VAQUERO will generally provide more effective control of perennial grass weeds than a single application. Make second application to actively growing grass 2 - 3 weeks after emergence of new growth.

Cultivation of treated grasses 7 days prior to or within 7 days after application of VAQUERO may reduce weed control. DO NOT APPLY VAQUERO if rainfall is expected within 1 hour of application since control may be reduced.

Ground Application

To ensure complete coverage, it is essential to use sufficient spray volumes and pressure. Use a minimum of 5 gallons and a maximum of 40 gallons of spray solution per acre. Under the following conditions, a minimum of 10 gallons per acre is required: narrow row soybeans, broadleaf herbicide tank mixes, perennial grasses, volunteer corn, drought or stress conditions, heavy grass pressure or when grasses are at, or near, maximum height. Failure to use a minimum of 10 gallons per acre under these conditions can result in poor coverage and reduced grass control requiring repeat applications. Spray pressures should reflect a minimum of 30 psi and a maximum of 60 psi at the nozzle. Do not use flood nozzles.

Applications to onions (dry bulbs and green), garlic, and shallots (dry bulbs and green) should be made in a minimum of 20 gallons of spray solution per acre.

Aerial Application

Use a minimum of 3 gallons of spray solution per acre unless otherwise directed on this label. As grass or crop foliage becomes dense, increase spray volume up to 10 gallons. For onions (dry bulbs and green), garlic, or shallots (dry bulbs and green): Do not exceed 8 fl. oz./A in a single application when applying by air. In California, air applications to onions, garlic or shallots should be made in a minimum of 20 gallons of spray solution per acre.

NOTE: Crop injury may occur when VAQUERO is applied to onions, garlic, or shallots with aerial equipment.

Spot Treatment

When using hand sprayers or high volume sprayers utilizing hand guns, mix 1/4% - 1/2% (0.33 oz. - 0.65 oz. per gallon) VAQUERO and spray to wet vegetation, while not allowing runoff of spray solution. For uses where a crop oil concentrate (COC) or methylated seed oil (MSO) are recommended, include the COC or MSO at 1% (1.3 oz. per gallon) by volume. For uses where a non-ionic surfactant is recommended, include the non-ionic surfactant at 1/4% (0.33 oz. per gallon) by volume.

NOTE: If VAQUERO is applied as a spot treatment, do not exceed the maximum rate allowed on a "per acre" basis or crop injury may occur.

USE RESTRICTIONS

- Do not apply if rain is expected within 1 hour of application as unsatisfactory control may occur.
- Do not plant rotational crops until 30 days after application of VAQUERO unless crop is listed on VAQUERO label.
- Do not apply a post-emergence broadleaf herbicide within one day following application of VAQUERO or reduced grass control may result.
- Do not apply under conditions of stress. Applying VAQUERO under conditions that do not promote active grass growth will reduce herbicide effectiveness. These conditions include drought, excessive water, extremes in temperature, low humidity and grasses either partially controlled or stunted from prior pesticide applications. Grasses under these kinds of stressful conditions will not absorb and translocate VAQUERO effectively, and will be less susceptible to herbicide activity.

- Do not allow VAQUERO to contact desirable grass crops such as corn, rice, sorghum, small grains, or turf, as these and other grass crops will be injured or killed. Minor leaf spotting may occur on treated plants under certain environmental conditions. New foliage is not affected.
- Application in Nassau and Suffolk counties of New York State is restricted to no more than 16 fl. oz. of VAQUERO (0.25 lb. a.i.) per acre per year.

CHEMIGATION INFORMATION

This product may be applied to onions and garlic by sprinkler irrigation systems. **DO NOT** apply by chemigation to any other crop.

SPRAY DRIFT MANAGEMENT

AVOIDING DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR AND THE GROWER.

A variety of factors including weather conditions (e.g., wind direction, wind speed, temperature, and relative humidity) and method of application (e.g., ground, aerial, airblast, chemigation) can influence pesticide drift. **DO NOT** apply when the following conditions exist that increase the likelihood of drift from intended targets: high or gusty winds and temperature inversions. The applicator and the grower must evaluate all factors and make appropriate adjustments when applying this product.

Drift from applying this product may result in damage to sensitive plants adjacent to the treatment area. Only apply this product when the potential for drift to these and other adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, or non-target crops) is minimal.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations. Where states have more stringent regulations, they must be observed.

Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The optimum drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential but will not prevent drift when applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size

Volume: Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows usually produce larger droplets.

Pressure: Do not use pressures greater than that specified by the nozzle manufacturer. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

Number of Nozzles: Use the minimum number of nozzles that provide uniform coverage.

Nozzle Orientation: For aerial applications, orient nozzles so that the spray is released parallel to the airstream. A parallel orientation results in larger droplets than other orientations and reduces air turbulence and the production of small droplets. Significant deflection from horizontal will reduce droplet size and increase drift potential.

Nozzle Type: Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low drift nozzles. For aerial applications, solid stream nozzles oriented straight back produce the largest droplets and potentially the least drift.

Drift Reduction Additives

Further reductions in drift can be obtained by the addition of a drift reduction product such as IN-PLACE® or CROSSHAIR®.

Boom Length

For some use patterns, reducing the effective boom length to less than $\frac{3}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

Wind/Wind Speed

Drift potential is lowest between wind speeds of 2-10 MPH. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Do not apply at wind speeds greater than 10 MPH. Wind speeds under 2 MPH can result in variable wind direction and high inversion potential. Only apply this product if the wind direction favors on-target deposition and the potential for drift to sensitive areas (including, but not limited to, residential areas, bodies of water, known habitat for non-target species, non-target crops) is minimal. **NOTE:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect drift.

Temperature Inversions

If applying at wind speeds less than 2 MPH, the applicator must determine if: (a) conditions of temperature inversion exist or (b) stable atmospheric conditions exist at, or below, nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog. However, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Application Height

Making applications at the lowest possible height (aircraft, ground driven spray boom) that is safe, practical, and efficacious reduces exposure of spray droplets to evaporation and wind movement.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the application equipment (e.g., aircraft, ground rig) upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Equipment

All aerial equipment and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates to ensure accurate and uniform distribution of the product over the treated area. For aerial equipment, the boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.

TANK MIXES

Always read and follow the entire label of each product to be used in the tank mix with this product.

Always follow the most restrictive label language, including all crop rotation and other crop restrictions, for all products whether used alone, or in a tank mix.

Tank mixes of VAQUERO and broadleaf herbicides may result in reduced grass control. If grass regrowth occurs, an additional application of VAQUERO may be necessary.

Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of the user, applicator and/or applicator advisor.

PRODUCT INFORMATION

VAQUERO is for use on the following:

Alfalfa	Corn (field)***	Orach
Amaranth	Corn Salad	Ornamentals
Arracacha	Cotton	Parsley
Arrowroot	Cranberry	Parsnip
Artichoke	Cress	Peach
Arugula	Cucumber	Peanut
Asparagus	Dandelion	Pea (Various)
Bean (Various)	Dasheen (Taro)	Pepino
Beets	Dock	Pepper
Bok Choy	Eggplant	Potato
Broccoli	Endive	Pumpkin
Broccoli (Chinese)	Fallow Land	Purslane
Broccoli Raab	Fennel	Radicchio
Brussels Sprout	Flax*	Radish
Burdock	Garlic	Radish (Oriental)
Bushberry (Various)	Gerkin	Rape Greens
Cabbage	Ginger	Rhubarb
Caneberry (Various)	Ginseng	Rutabaga
Canna	Gourd (Edible)	Safflower
Canola*	Ground Cherry	Salsify
Cantaloupe	Herbs (various)	Scallion
Cardoon	Honeydew Melon	Sesame
Carrot	Hops	Shallot
Cassava	Horseradish	Skirret
Cauliflower	Jerusalem Artichoke	Soybean
Cavalo Broccolo	Kale	Spices
Celeriac	Kohlrabi	Spinach
Celery	Leek	Squash
Celery (Chinese)	Leren	Strawberry
Celtuce	Lettuce	Sugarbeet
Chayote	Melon (Citrus)	Sunflower
Chervil	Mint	Sweet Potato
Chicory	Mizuna	Swiss Chard
Chinese Artichoke	Momordica	Tanier (Cocovam)
Chinese Waxgourd	Muskmelon	Tomatillo
Christmas Trees	Mustard Greens	Tomato
Chrysanthemum (edible)	Mustard Seed*	Tumeric
Chufa	Mustard Spinach	Turnip
Clover**	Non-Bearing Fruit/Nut Crops	Turnip Greens
Collards	Non-Crop Areas	Watermelon
Conifer Nurseries	Non-Planted Areas	Yam
Conifer Plantations	Onion	

*Not registered for use in California.

**For use on clover grown in the states of Idaho, Oregon, and Washington only.

*** VAQUERO Herbicide is for use to control existing stands of field corn (including Roundup Ready™ corn) and for use prior to replanting corn.

CHEMIGATION – ONIONS (Dry Bulbs and Green) AND GARLIC ONLY

SPRINKLER IRRIGATION APPLICATION

- Do not apply VAQUERO by chemigation in the states of Idaho, Montana, Oregon and Washington.
- Do not apply VAQUERO by chemigation to any other crop besides onions and garlic.

Apply VAQUERO at the high rate specified for annual grasses (16 fl. oz./A) when the grass height is at the shorter end of the height range (application to taller grasses may not provide adequate control). Add a non-ionic surfactant at 0.25% v/v.

Apply VAQUERO in 0.1 - 0.2 acre-inch of water either at the end of a regular irrigation set or as a separate application not associated with a regular irrigation using the least amount of water that provides proper distribution and coverage. Application of more than label specified volume of irrigation water per acre may result in decreased product performance by removing the chemical from the zone of effectiveness. Use a metering device to inject VAQUERO into irrigation water at a constant flow.

Constant agitation must be maintained in the chemical supply tank during the entire period of herbicide application. Inject the product with a positive displacement pump into the main line ahead of a right angle turn to ensure adequate mixing. Allow time for all lines to flush the herbicide through all nozzles before turning off irrigation water. To ensure the lines are flushed and free of remaining herbicide, a dye indicator may be injected into the lines to mark the end of the application period.

Do not apply VAQUERO through an irrigation system connected to a public water system. A public water system is a system for the provision of piped water to the public for human consumption when such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

USE PRECAUTIONS

1. Apply this product only through the following sprinkler irrigation systems: center pivot, lateral move, end tow, side (wheel) roll, travelers, big gun, solid set, or hand move. Do not apply this product through any other type of irrigation system.
2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from non-uniform distribution of treated water.
3. If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the label-prescribed safety devices for public water supplies are in place.
5. A person knowledgeable of the chemigation system and responsible for its operation or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
6. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
7. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
8. The pesticide injection pipeline must also contain a functional, normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
9. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
10. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
11. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
12. Do not apply when wind speed favors drift beyond the area intended for treatment.

ADJUVANT RECOMMENDATIONS

The addition of a crop oil concentrate or methylated seed oil or a non-ionic surfactant such as RAINIER-EA® or R-11® will improve the performance of VAQUERO. Crop oil concentrates and methylated seed oils can cause crop injury with certain tank mix partners or on sensitive crops. Under these circumstances, non-ionic surfactants (NIS) can be used in place of crop oil concentrates. Reduced weed control may result from use of non-ionic surfactant, instead of crop oil concentrates. Oil/nitrogen blend adjuvants may be substituted for crop oil concentrates or methylated seed oil at appropriate equivalent use rates. Under drought conditions, methylated seed oil adjuvants can be used in place of COCs to improve performance. Methylated seed oils can increase crop injury potential and care should be taken when considering their use. Ammonium sulfate (AMS) or urea-ammonium nitrate (UAN), and similar liquid foliar nitrogen fertilizers can improve control of hard to control grasses and help overcome potential antagonism from tank mix partners. The use of AMS or UAN is only allowed on specified crops and may increase the possibility of crop injury under some conditions.

Follow **TABLE 1** for **ADJUVANT USE INSTRUCTIONS**.

Follow **TABLE 2** for **VAQUERO HERBICIDE USE RATES/RESTRICTIONS/LIMITATIONS** for specific use guidelines.

TABLE 1: ADJUVANT USE WITH VAQUERO HERBICIDE

Adjuvant	Adjuvant Use Rate	Comments
COC (Crop Oil Concentrate) OR	1% v/v	Use with VAQUERO in most use patterns other than those listed directly below.
MSO (Methylated Seed Oil) OR	1% v/v	Use for improved control under drought conditions or other weed stress conditions. MSO can increase injury with some tank mix partners.
NON-IONIC SURFACTANT	0.25% v/v	Use where directed or where crop sensitivity is a concern.
OIL/NITROGEN BLEND	1% v/v	May be used in place of COC or MSO for enhanced efficacy where conditions and crops permit.
Nitrogen Fertilizer ¹	Use Rate	Comments
Ammonium Sulfate (AMS) OR	1-4 lb./A or 8.5–18 lb./100 gallons of spray solution	Use for improved control of difficult grass species. AMS is not to be used on all crops.
28-32% Urea Ammonium Nitrate (UAN)	1-2 qt./A	Use when a source of AMS is not available.
<p>¹ The addition of liquid fertilizer is not recommended for the following crops: Arracasha, Arrowroot, Artichoke, Asparagus, Beet, Broccoli, Broccoli Raab, Brussels Sprout, Burdock, Bushberry, Caneberry, Cabbage, Canna, Cardon, Carrot, Cassava, Cauliflower, Cavalo Broccolo, Celeriac, Celery, Celtuce, Chayote, Chervil, Chicory, Chufa, Collards, Cranberry, Cucurbits, Dasheen, Eggplant, Fennel, Garlic, Ginger, Ginseng, Ground Cherry, Herbs, Hops, Horseradish, Kale, Leeks, Leren, Mizuna, Mustard Greens, Mustard Seed, Non-Bearing Food Crops, Onion (dry bulb), Parsley, Parsnip, Peach, Pepino, Pepper, Pimento, Potato, Radish, Rape Greens, Rhubarb, Rutabaga, Salsify, Sesame, Shallots (dry bulb), Skirret, Spinach, Strawberry, Sweet Potato, Swiss Chard, Tanier, Tomatillo, Turmeric, Turnip and Yam.</p>		

**TABLE 2: CROP SPECIFIC USE DIRECTIONS, RESTRICTIONS
AND LIMITATIONS FOR VAQUERO**

Crops	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Adjuvant and/or AMS Use Instructions	Special Use Instructions
Alfalfa including: Seedling or Established Alfalfa Sainfoin Holy Clover Birdsfoot Trefoil	15 days before grazing, feeding or harvesting (cutting) for forage or hay	6-16 fl. oz.	COC/MSO at 1% v/v or NIS at 0.25% v/v AMS at 1-4 lb./A	<ul style="list-style-type: none"> •Do not apply more than 32 fl. oz./A per year. For weed control in established alfalfa, the minimum use rate is 10 fl. oz./A. •Do not apply VAQUERO and 2,4-DB as a tank mix to alfalfa unless the 60 day feeding, grazing, and harvesting restriction on the 2,4-DB label can be observed. •This product may be applied to alfalfa grown for seed, hay, silage, green chop, or direct grazing.
Artichoke (Globe)	5 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •For repeat applications allow a minimum 14-day interval between applications. •Do not apply more than 32 fl. oz./A (0.5 lb. ai/A) per year.
Asparagus	1 day	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •For repeat applications allow a minimum 14-day interval between applications.
Beans, Dry including: Bean (<i>Lupinus spp.</i>) Grain Sweet White White Sweet Bean (<i>Phaseolus spp.</i>) Field Kidney Lima (dry) Navy Pinto Tepary Bean (<i>Vigna spp.</i>) Adzuki Bean Black-eyed Pea Catjang Cowpea Crowder Pea Moth Bean Mung Bean Rice Bean Southern Pea Urd Bean Broad (dry) Chickpea (garbanzo) Guar Lablab Bean Lentil	30 days	6-16 fl. oz.	COC/MSO at 1% v/v or NIS at 0.25% v/v AMS at 1-4 lb./A	<ul style="list-style-type: none"> •For repeat applications allow a minimum 14-day interval between applications. •Refer to Table 9 for reduced rate directions for the control of small annual grasses. •The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, Rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.

Crops	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Adjuvant and/or AMS Use Instructions	Special Use Instructions
Bean, Succulent including: Bean (<i>Phaseolus spp.</i>) Broad Bean (succulent) Lima Bean (green) Bean (<i>vigna spp.</i>) Black-eyed Pea Cowpea Southern Pea	21 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Refer to Table 9 for reduced rate directions for the control of small annual grasses. •Do not apply more than one application per acre per year.
Beet, Garden	30 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •For repeat applications, allow a minimum 14-day interval between applications.
Brassica Vegetables, Head and Stem including: Broccoli Cabbage Cauliflower Brussels Sprouts	30 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •For repeat applications, allow a minimum 14-day interval between applications.
Bushberry, including: Aronia berry Blueberry, Highbush Chilean Guava Cranberry, Highbush Currant, Black Currant, Buffalo Currant, Native Currant, Red Elderberry European Barberry Gooseberry Honeysuckle, edible Huckleberry Jostaberry Juneberry Saskatoon berry Native currant Salai Sea Buckthorn Cultivars, varieties and/or hybrids of these	14 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Do not apply more than 32 fl. oz. (0.5 lb. ai/A) per year. •For repeat applications allow a minimum 14-day interval between applications. •Apply at the base of the plant where grassy weeds are growing near the ground. •Do not apply to low growing berries. •Do not apply to Bushberry grown for root stock.
Caneberry, including: Blackberry Loganberry Raspberry, black Raspberry, red Raspberry, wild Cultivars, varieties and/or hybrids of these.	7 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Do not apply more than 32 fl. oz./A (0.5 lb. ai/A) per year. •For repeat applications allow a minimum 14-day interval between applications. •Apply at the base of the plant where grassy weeds are growing near the ground.

Crops	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Adjuvant and/or AMS Use Instructions	Special Use Instructions
				<ul style="list-style-type: none"> •Do not apply to low growing berries. •Do not apply to Caneberry grown for root stock.
Canola* *Not for use in California unless accompanied by a supplemental label	70 days	4-6 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Do not apply after crop has begun bolting. Crop injury may occur when VAQUERO is applied during the bloom period. •Do not exceed 6 fl. oz./A in a year.
Carrot	30 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •For repeat applications, allow a minimum 14-day interval between applications.
Clover	15 days before grazing, feeding, or harvesting (cutting) for forage or hay	6-16 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •For use on clover grown in Idaho, Oregon, and Washington only. •Do not exceed 16 fl. oz. in a year.
Corn, Field For burn down of existing stand of Roundup Ready field corn or volunteer Roundup Ready field corn prior to replanting field corn See Directions for Use in Roundup Ready Field Corn (Burn down) in Table 6.	90 days	2 fl. oz.	COC/MSO at 1% v/v plus AMS at 1-4 lb./A	<ul style="list-style-type: none"> •Do not make more than one application per year. •Do not apply more than 2 fl. oz./A per year. •To control the existing stand, replant no sooner than 6 days after application.
Cotton	60 days	6-16 fl. oz.	COC/MSO at 1% v/v or NIS at 0.25% v/v AMS at 1-4 lb./A	<ul style="list-style-type: none"> •Do not graze treated fields or feed treated forage or hay to livestock. •Do not apply more than 32 fl. oz./A in a single year. •For repeat applications allow a minimum 14-day interval between applications.
Cranberry	30 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Do not apply between the "hook" stage and full fruit set. •For repeat applications, allow a minimum 14-day interval between applications.

Crops	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Adjuvant and/or AMS Use Instructions	Special Use Instructions
Cucurbits, including: Cantaloupes (all) Chayote (fruit) Chinese Wax Gourd Citron Melon Cucumber Gherkin Gourd, edible Honeydew Melon Muskmelons (all) Pumpkin Squash (all) Watermelon	14 days	6-8 fl. oz.	NIS at 0.25% v/v	•For repeat applications, allow a minimum 14-day interval between applications.
Fallow Land Conifer Trees (and other non-producing agricultural areas) Non-Crop or Non-Planted Areas	N/A	6-16 fl. oz.	COC/MSO at 1% v/v or NIS at 0.25% v/v AMS at 1-4 lb./A	•Do not plant any crop for 30 days after application unless VAQUERO is registered for use on that crop.
Flax* *Not for use in California unless accompanied by a supplemental label	60 days	6-8 fl. oz.	NIS at 0.25% v/v	•Apply prior to bloom. Crop injury may occur when VAQUERO is applied during the bloom period. •Do not exceed 16 fl. oz./A in a year.
Fruiting Vegetables (except Tomato), including: Eggplant Groundcherry Pepino Peppers (all) Tomatillo	20 days	6-8 fl. oz.	NIS at 0.25% v/v	•For repeat applications, allow a minimum 14-day interval between applications.
Garlic	45 days	6-16 fl. oz.	NIS at 0.25% v/v	•Use a minimum of 20 gallons per acre spray volume by ground. •Use a minimum of 10 gallons per acre spray volume by air in all states except California. •For ground and air applications, do not exceed 8 fl. oz./A in a single application. •Do not exceed 2 applications per year. •For spot treatment, do not exceed the maximum rate allowed on a “per acre” basis or crop injury may occur.

Crops	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Adjuvant and/or AMS Use Instructions	Special Use Instructions
Garlic* *California Only	45 days	6-16 fl. oz.	NIS at 0.25 v/v	<ul style="list-style-type: none"> •Use a minimum of 20 gallons per acre spray volume by ground. •Use a minimum of 10 gallons per acre spray volume by air. •For ground and air applications, do not exceed 8 fl. oz./A in a single application. •Do not apply VAQUERO until the crop has at least two full leaves. •Observe a minimum of 14 days between applications of VAQUARO and liquid nitrogen or other herbicide applications. Injury to the crop may occur when shorter intervals are observed. •For spot treatment, do not exceed the maximum rate allowed on a "per acre" basis or crop injury may occur.
Garlic	For chemigation refer to the instructions found under the section titled CHEMIGATION – ONIONS (Dry Bulbs and Green) AND GARLIC ONLY			

Crops	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Adjuvant and/or AMS Use Instructions	Special Use Instructions
Herbs including: Angelica Balm Basil Borage Bumet Camomile Catnip Chervil (dried) Chive Chive, Chinese Clary Coriander (leaf) Costmary Cilantro (leaf) Curry (leaf) Dill (dillweed) Horehound Hyssop Lavender Lovage (leaf) Marigold Marjoram (Origanum spp.) Nasturtium Parsley (dried) Pennyroyal Rosemary Rue Sage Savory, Summer and Winter	14 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •VAQUERO has not been tested on all herbs and herb varieties. It is the responsibility of the user to test VAQUERO on a small portion of the crop to be treated before treating the entire field. •Crop tolerance to VAQUERO should be verified on a small area of the herb crop, at the specified VAQUERO rate and with the same NIS that will be used on the herb field. Grass control may be acceptable without the addition of an adjuvant. If no crop response is evident seven (7) days after treatment, VAQUERO may be used on the entire field at the rate tested and with the same crop oil used in the tolerance test. •Do not apply more than 32 fl.oz./A in a year. •For repeat applications allow a minimum 14-day interval between applications.
Hops	21 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •For repeat applications allow a minimum 14-day interval between applications.
Leafy Petioles including: Cardoon Celery Celtuce Chinese Celery Fennel, Florence (finochio) Rhubarb Swiss Chard	30 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •For repeat applications allow a minimum 14-day interval between applications.

Crops	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Adjuvant and/or AMS Use Instructions	Special Use Instructions
Leafy Brassica Greens including: Broccoli Raab Cabbage, Chinese (Bok Choy) Collards Kale Mizuna Mustard Greens Mustard Spinach Rape Greens Turnip Greens	14 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •For repeat applications, allow a minimum 14-day interval between applications.
Leafy Greens including: Amaranth Chinese Spinach Leafy Amaranth Tampala Arugula (roquette) Chervil Chrysanthemum, Garland Corn Salad Cress Garden Upland (yellow rock and winter) Dandelion Dock (sorrel) Endive (escarole) Lettuce, Head and Leaf Orach Parsley Purslane Garden Winter Radicchio (red chicory) Spinach New Zealand Vine (Indian and Malabar)	14 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •For repeat applications, allow a minimum 14-day interval between applications.
Leafy Greens including: Lettuce, Head and Leaf	14 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •For repeat applications, allow a minimum 14-day interval between applications.

Crops	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Adjuvant and/or AMS Use Instructions	Special Use Instructions
Legume Vegetables, Edible Podded including: Bean (<i>Phaseolus spp.</i>) Runner Snap Wax Bean (<i>Vigna spp.</i>) Asparagus Chinese Longbean Moth Yardlong Jackbean Pea (<i>Pisum spp.</i>) Dwarf Edible pod Snow Sugar Snap Pigeon Sword Bean	21 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Do not apply more than one application per acre per year. •For peas apply before bloom, but no later than 21 days before harvest. •Refer to Table 9 for reduced rate directions for the control of small annual grasses.
Mint	21 days	6-16 fl. oz.	COC/MSO at 1% v/v or NIS at 0.25% v/v AMS at 1-4 lb./A	<ul style="list-style-type: none"> •For repeat applications, allow a minimum 14-day interval between applications. •See Table 8 for further instructions.
Mustard Seed* *Not for use in California unless accompanied by a supplemental label	75 days	4-6 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Do not apply after crop has begun bolting. Crop injury may occur when VAQUERO is applied during the bloom period. •Do not exceed 16 fl. oz. of VAQUERO per acre in a year.
Onions (Dry Bulbs Only)	45 days	6-16 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Use a minimum of 20 gallons per acre spray volume by ground. •Use a minimum of 10 gallons per acre spray volume by air in all states except California. •Do not exceed 8 fl. oz./A in a single aerial application. •For spot treatment, do not exceed the maximum rate allowed on a “per acre” basis or crop injury may occur.

Crops	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Adjuvant and/or AMS Use Instructions	Special Use Instructions
*Onions (Dry Bulbs Only) *California Only	45 days	6-16 fl. oz.	NIS at 0.25%v/v	<ul style="list-style-type: none"> •Use a minimum of 20 gallons per acre spray volume by ground. •Use a minimum of 20 gallons per acre spray volume by air. Do not exceed 2 aerial applications per year. •Do not apply VAQUERO until the crop has at least two full leaves. •Observe a minimum of 14 days between applications of VAQUARO and liquid nitrogen or other herbicide applications. Injury to the crop may occur when shorter intervals are observed. •For spot treatment, do not exceed the maximum rate allowed on a “per acre” basis or crop injury may occur.
Onions (Dry Bulbs and Green)	For chemigation, refer to the instructions found under the section titled CHEMIGATION – ONIONS (Dry Bulbs and Green) AND GARLIC ONLY			
Onions, Green including: Green Eschalots Green Shallots Japanese Bunching Onions Leeks Scallions or Spring Onions	14 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •For repeat applications, allow a minimum 14-day interval between applications.
Ornamentals	N/A	6-16 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Sugar maples cannot be tapped for syrup within one year of VAQUERO application. •If VAQUERO is applied as a spot treatment, care should be taken to not exceed the maximum rate allowed on a “per acre” basis or crop injury may occur. •Refer to instructions found under the section titled “NON-BEARING FOOD CROPS”.
Non-Bearing Food Crops	N/A	6-8 fl. oz.		

Crops	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Adjuvant and/or AMS Use Instructions	Special Use Instructions
Pea, Dry including: Pea (<i>Pisum spp.</i>) Field Pigeon	30 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Do not apply more than one application per acre per year. •Apply before bloom but not later than 30 days prior to harvest. •Refer to Table 9 for reduced rate directions for the control of small annual grasses.
Peas, Succulent including: Pea (<i>Pisum spp.</i>) English Pea Garden Pea Green Pea Pigeon Pea	21 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Do not apply more than one application per acre per year. •Apply before bloom but not later than 21 days prior to harvest. •Applications of VAQUERO to peas during the bloom period could result in severe crop injury, including loss of yield and delayed maturity. •Refer to Table 9 for reduced rate directions for the control of small annual grasses.
Peach	14 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Do not apply more than 32 fl. oz./A (0.5 lb. ai/A) per year. •For repeat applications allow a minimum 14-day interval between applications. •Do not apply to peaches grown for root stock.
Peanut (including Perennial)	40 days	6-16 fl. oz.	COC/MSO at 1% v/v or NIS at 0.25% v/v AMS at 1-4 lb./A	<ul style="list-style-type: none"> •Do not apply more than 32 fl. oz./A in a year. •The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, Rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
Potato	30 days	6-16 fl. oz.	COC/MSO at 1% v/v or NIS at 0.25% v/v AMS at 1-4 lb./A	<ul style="list-style-type: none"> •Do not apply more than 32 fl. oz. (0.25 lb. ai) per acre in a year. •For repeat applications, allow a minimum 14-day interval between applications.
Radish	15 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Do not apply more than 16 fl. oz. (0.25 lb. ai) per acre in a year. •For repeat applications, allow a minimum 14-day interval between applications.

Crops	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Adjuvant and/or AMS Use Instructions	Special Use Instructions
Root Vegetables (except Radish), including: Chicory Ginseng Horseradish Turnip	30 days	6-8 fl. oz.	NIS at 0.25% v/v	•For repeat applications, allow a minimum 14-day interval between applications.
Safflower	70 days	6-8 fl. oz.	NIS at 0.25% v/v	•For repeat applications allow a minimum 14-day interval between applications.
Sesame	14 days	6-8 fl. oz.	NIS at 0.25% v/v	•Do not apply during flowering. •For repeat applications allow a minimum 14-day interval between applications.
Shallots (Dry Bulbs Only)	45 days	6-16 fl. oz.	NIS at 0.25% v/v	•Use a minimum of 20 gallons per acre spray volume by ground. •Use a minimum of 10 gallons per acre spray volume by air in all states except California. •For ground and air applications, do not exceed 8 fl. oz./A in a single application. •Do not exceed 2 applications per year. •For spot treatment, do not exceed the maximum rate allowed on a “per acre” basis or crop injury may occur.
*Shallots (Dry Bulbs Only) *California Only	45 days	6-16 fl. oz.	NIS at 0.25% v/v	•Use a minimum of 20 gallons per acre spray volume by ground. •Use a minimum of 20 gallons per acre spray volume by air. •For ground and air applications, do not exceed 8 fl. oz./A in a single application. •Do not apply VAQUERO until the crop has at least two full leaves. •Observe a minimum of 14 days between applications of VAQUARO and liquid nitrogen or other herbicide applications. Injury to the crop may occur when shorter intervals are observed. •For spot treatment, do not exceed the maximum rate allowed on a “per acre” basis or crop injury may occur.

Crops	Minimum Time From Application to Harvest (PHI)	Use Rates Per Acre	Adjuvant and/or AMS Use Instructions	Special Use Instructions
Soybean	60 days	3-16 fl. oz.	COC/MSO at 1% v/v or NIS at 0.25% v/v AMS at 1-4 lb./A	<ul style="list-style-type: none"> •Do not graze treated fields or feed treated forage or hay to livestock. •Refer to Table 9 for reduced rate directions for the control of small annual grasses. •Refer to Table 7 for reduced rate directions for the control of volunteer corn according to corn height. • Lowest use rate may not be effective on hard to control grass species.
Strawberry	4 days	6-8 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •For repeat applications, allow a minimum 14-day interval between applications.
Sugarbeet	40 days	6-16 fl. oz.	COC/MSO at 1% v/v or NIS at 0.25% v/v AMS at 1-4 lb./A	<ul style="list-style-type: none"> •Refer to Table 9 for reduced rate directions for the control of small annual grasses. •Do not apply more than 32 fl. oz./A in a year. •Refer to the instructions found in the section titled “Directions for Micro-Rate Applications to Sugarbeets”.
Sunflower	70 days	6-16 fl. oz.	COC/MSO at 1% v/v or NIS at 0.25% v/v AMS at 1-4 lb./A	<ul style="list-style-type: none"> •Do not apply more than 32 fl. oz./A in a year. •For repeat applications, allow a minimum 14-day interval between applications.
Sweet Potato, Yam and other tuberous and corm vegetables (except Potato), including: Artichoke – Chinese, Jerusalem Cassava – Bitter, Sweet Ginger	30 days	6-16 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Do not apply more than 32 fl. oz./A in a year. •For repeat applications allow a minimum 14 day interval between applications.
Tomato	20 days	6-16 fl. oz.	NIS at 0.25% v/v	<ul style="list-style-type: none"> •Do not apply more than 16 fl. oz./A in a year. •For repeat applications allow a minimum 14 day interval between applications.

NON-BEARING FOOD CROPS

Do not apply VAQUERO to non-bearing fruit or nut crops that are grown for root stock.

Crop injury to non-bearing fruit and nut crops can occur if VAQUERO is improperly applied. VAQUERO should not be applied directly over the top of these plant types. Instead, spray should be directed at the base of the plant where grassy weeds are growing near the ground.

Non-bearing fruit and nut crops are plants that will not bear fruit or nuts for at least one year following VAQUERO application.

COMMON NAME	SCIENTIFIC NAME
Apples	<i>Malus spp.</i>
Berries	<i>Vaccinium spp.</i>
	<i>Rubus spp.</i>
Cherry, Sweet	<i>Prunus avium</i>
Citrus Fruits	<i>Citrus spp.</i>
Grapes	<i>Vitis spp.</i>
Olives	<i>Olea spp.</i>
Peach	<i>Prunus persica</i>
Pears	<i>Pyrus communis</i>
Prunes	<i>Prunus spp.</i>
Stone Fruits	<i>Prunus spp.</i>
Strawberries	<i>Fragaria spp.</i>
Tree Nuts	
Almond	<i>Prunus dulcis</i>
Filbert	<i>Corylus maxima</i>
Pecan	<i>Carya illinoensis</i>
Pistachio	<i>Pistacia vera</i>
Walnut	<i>Juglans spp.</i>

CONIFER TREES

VAQUERO can be used to control labeled grasses in Christmas tree farms, conifer nurseries, and conifer plantations (but not in forests).

COMMON NAME	SCIENTIFIC NAME
Arborvitae, American	<i>Thuja occidentalis</i>
Cedars	<i>Cedrus spp.</i>
Cypress	<i>Taxodium spp.</i>
Douglas Fir	<i>Pseudotsuga menziesii</i>
Firs	<i>Abies spp.</i>
Hemlock, Canadian/Eastern	<i>Tsuga canadensis</i>
Hemlock, Western	<i>Tsuga heterophylla</i>
Pines	<i>Pinus spp.</i>
Spruces	<i>Picea spp.</i>
Yew	<i>Taxus spp.</i>

NON-CROP OR NON-PLANTED AREAS

The following areas are considered non-crop or non-planted areas: rights-of-way including railroads, highways, roads, dividers, medians, pipelines, public utility lines, pumping stations, transformer stations and substations, around airports, electric utilities, commercial buildings, manufacturing plants, storage yards, rail yards, fence lines, parkways and post-harvest croplands, also beneath greenhouse benches and around golf courses.

TABLE 3: DIRECTIONS FOR ANNUAL GRASSES
(EXCEPT FOR IN ESTABLISHED ALFALFA AND MINT)

Apply only to actively growing grasses at recommended weed heights.

Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.

Use the high rate under heavy grass pressure and/or when grasses are at maximum height.

Grass Species	Scientific Name	Weed* Height (inches)	Rate (fl. oz./A)	High Rate ⁽⁴⁾
Barnyardgrass	<i>Echinochloa crus-galli</i>	2-8	6	8
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	2-6	6	8
Brome				
California	<i>Bromus carinatus</i>	2-6	6	8
Cheatgrass	<i>Bromus secalinus</i>	2-6	6	8
Downy	<i>Bromus tectorum</i>	2-6	6	8
Ripgut	<i>Bromus diandrus</i>	2-6	6	8
Canarygrass	<i>Phalaris canariensis</i>	1-4	6	8
Crabgrass				
Hairy	<i>Digitaria adscendens</i>	2-6**	6	8
Large	<i>Digitaria sanguinalis</i>	2-6**	6	8
Smooth	<i>Digitaria ischaemum</i>	2-6**	6	8
Southern	<i>Digitaria ciliaris</i>	2-6**	6	8
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	2-6**	6	8
Fall Panicum	<i>Panicum dichotomiflorum</i>	2-8	6	8
Field Sandbur	<i>Cenchrus incertus</i>	2-6	6	8
Foxtail				
Giant	<i>Setaria faberi</i>	2-12	6	8
Green	<i>Setaria viridis</i>	2-8	6	8
Yellow	<i>Setaria glauca</i>	2-8	6	8
Goosegrass	<i>Eleusine indica</i>	2-6**	6	8
Itchgrass	<i>Rottboellia exaltata</i>	2-6	6	8
Junglerice	<i>Echinochloa colona</i>	2-6	6	8
Lovegrass (Stinkgrass)	<i>Eragrostis cilianensis</i>	2-6	6	8
Rabbitsfootgrass	<i>Polypogon monspeliensis</i>	1-4	6	8
Red Rice	<i>Oryza sativa</i>	1-3	6	8
Ryegrass				
Hardy	<i>Lolium remotum</i>	2-6	6	8
Italian	<i>Lolium multiflorum</i>	2-6	6	8
Seedling Johnsongrass	<i>Sorghum halepense</i>	4-10	6	8
Shattercane	<i>Sorghum bicolor</i>	6-18	6	8
Southwestern Cupgrass	<i>Eriochlola gracilllis</i>	2-6	6	8
Sprangletop				
Amazon	<i>Leptochloa panicoides</i>	2-6	6	8
Bearded	<i>Leptochloa fascicularis</i>	2-6	6	8
Mexican	<i>Leptochloa uninervia</i>	2-6	6	8
Red	<i>Leptochloa filiformis</i>	2-6	6	8
Texas Panicum	<i>Panicum texanum</i>	2-6	6	8
Volunteer Cereals ⁽³⁾				
Barley	<i>Hordeum vulgare</i>	2-6	6	8
Oats	<i>Avena sativa</i>	2-6	6	8
Rye	<i>Secale cereale</i>	2-6	6	8
Wheat	<i>Triticum aestivum</i>	2-6	6	8
Volunteer Corn ⁽²⁾	<i>Zea mays</i>	4-12	3	6

Grass Species	Scientific Name	Weed* Height (inches)	Rate (fl. oz./A)	High Rate ⁽⁴⁾
Volunteer Corn (S.R.) ⁽¹⁾	<i>Zea mays</i>	4-12	8	(suppression only)
Volunteer Corn ⁽²⁾	<i>Zea mays</i>	12-24	4	8
Volunteer Grain Sorghum	<i>Sorghum bicolor</i>	8-12	6	8
Wild Oats	<i>Aven fatua</i>	2-6	6	8
Wild Proso Millet	<i>Panicum miliaceum</i>	2-10	6	8
Witchgrass	<i>Panicum capillare</i>	2-8	6	8
Woolly Cupgrass	<i>Eriochloa villosa</i>	2-8	6	8

*Generally occurs between 3-leaf stage and tillering

**Length of lateral growth

(1) Sethoxydim resistant volunteer corn.

(2) Includes Roundup Ready, Liberty Link® and IMI-Corn® volunteer corn.

(3) When the cereal grain crop (such as wheat) is interseeded for crop establishment or is planted as wind breaks to aid crop establishment, the minimum VAQUERO use rate for control is 8 fl. oz./A.

(4) Rates higher than 8 fl. oz./A may be applied in certain geographic areas, environmental conditions, or cropping situations, where experience has shown that higher rates are needed for satisfactory control of annual grasses. In these situations, rates from 8 - 16 fl. oz./A may be applied. Do not apply more than 8 fl. oz./A of VAQUERO per application to the following crops: asparagus, carrot, cranberry, cucurbit, flax, fruiting vegetables (except tomato), garden beet, green onion, head and stem brassica vegetables, herbs, hops, leaf petioles, leafy brassica greens, leafy greens, non-bearing food crops, root vegetables, safflower, sesame and strawberry. Do not apply more than 6 fl. oz./A of VAQUERO per application to canola or mustard seed.

TABLE 4: DIRECTIONS FOR PERENNIAL GRASSES

- Make applications only to actively growing grasses at specified weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the specified growth stage for treatment.
- Use the high rate when grasses are at maximum height and/or under heavy grass pressure.

Grass Species	Scientific Name	Weed Height (inches)	Rate (fl. oz./A)	High Rate
Bermudagrass	<i>Cynodon dactylon</i>			
First Application		3 (or up to 6" runners)	8	16
Repeat Application(s) (if regrowth occurs)		3 (or up to 6" runners)	8	16
Fescue, tall	<i>Festuca arundinacea</i>			
First Application		4-8	8	16
Repeat Application(s) (if regrowth occurs)		4-8	8	16
Foxtail Barley	<i>Hordeum jubatum</i>			
First Application		2-6	8	16
Repeat Application(s) (if regrowth occurs)		2-6	8	16
Orchardgrass	<i>Dactylis glomerata</i>			
First Application		4-8	8	16
Repeat Application(s) (if regrowth occurs)		4-8	8	16
Quackgrass*	<i>Elytrigia repens</i>			
First Application		4-12	8	16
Repeat Application(s) (if regrowth occurs)		4-12	8	16

Grass Species	Scientific Name	Weed Height (inches)	Rate (fl. oz./A)	High Rate
Rhizome Johnsongrass	<i>Sorghum halepense</i>			
First Application		12-24	8	16
Repeat Application(s) (if regrowth occurs)		6-18	6	8
Wirestem Muhly	<i>Muhlenbergia frondosa</i>			
First Application		4-8	8	16
Repeat Application(s) (if regrowth occurs)		4-8	8	16
Perennial Bluegrass*				
Roughstalk	<i>Poa trivialis</i>			
Kentucky	<i>Poa prantensis</i>			
First Application		2-4	8	16
Repeat Application(s) (if regrowth occurs)		2-4	8	16
Bentgrass*	<i>Agrostis spp.</i>			
First Application		2-4	-	16
Repeat Application(s) (if regrowth occurs)		2-4	-	16

*Control of quackgrass, perennial bluegrass and bentgrass with VAQUERO may be enhanced by adding AMS at 2.5 - 4.0 lb./A.

TABLE 5: DIRECTIONS FOR ANNUAL BLUEGRASS CONTROL WITH VAQUERO

Grass Species	Scientific Name	Weed Stage	Rate (fl. oz./A)	High Rate
Annual Bluegrass	<i>Poa annua</i>	to 4-Leaf	6*	16

*Use a minimum of 8 fl. oz./A to control annual bluegrass in seedling and established alfalfa and mint.

1. Grass needs to be actively growing at time of application(s). Apply under favorable soil moisture and humidity that exists within a few days after rainfall or within 7 days after irrigation.
2. Apply at weed stage indicated on the label, as reduced control can be expected with more mature annual bluegrass.
3. Use the high rate under heavy grass pressure and/or when annual bluegrass is more mature.
4. Always add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.

TABLE 6: DIRECTIONS FOR USE IN ROUNDUP READY FIELD CORN (BURNDOWN)

USE DIRECTIONS FOR USE IN ROUNDUP READY FIELD CORN (BURNDOWN)		
APPLICATIONS RATES		
GRASS SPECIES	WEED SIZE (inches)	Rate when applied alone or with glyphosate
Field Corn	Up to 12	2 fl. oz./A
For control of existing stand of Roundup Ready field corn or volunteer Roundup Ready field corn prior to replanting field corn. Care must be taken to avoid in-field boom (spray) overlaps or excessive crop injury may occur. Replant no sooner than 6 days after application. Adjuvant recommendations: COC/MSO at 1% v/v plus AMS at 1-4 lb./A.		

TABLE 7: DIRECTIONS FOR ROUNDUP READY VOLUNTEER CORN CONTROL IN ROUNDUP READY SOYBEANS WITH VAQUERO HERBICIDE TANK MIX

Roundup Ready Volunteer Corn Height (inches)	VAQUERO Rate fl. oz./A	Glyphosate ⁽¹⁾ Rate	Adjuvant
<12	3	1- 2 lb. ai./A (Approximately equivalent to 22-44 fl. oz./A of Roundup WeatherMAX® or 32-64 fl. oz./A of most generic glyphosate formulations)	COC, MSO, Oil-Nitrogen Blends, or NIS ⁽²⁾ may be used in this pattern. See Table 1 for appropriate rates. Use AMS or a suitable replacement at 8.5-18 gallons-17 lb. per 100 gallons of carrier volume.
12-18	4		
>18-24	5		

(1) Glyphosate formulation must be labeled for use on Roundup Ready soybeans.

(2) Reduced weed control may result from the use of a non-ionic surfactant.

TABLE 8: DIRECTIONS FOR ANNUAL AND PERENNIAL GRASS CONTROL IN ESTABLISHED ALFALFA AND MINT WITH VAQUERO

Grass Species	Weed Stage	Rate (fl. oz./A)	High Rate (fl. oz./A)
See Annual Grasses in Table 3 and Perennial Grasses Listed in Table 4	See Tables 3 and 4 for Annual and Perennial Weed Stage Information	10	16

Mowing: The best control of annual grasses can be achieved by applying VAQUERO before grass weeds are mowed. Once a grass is mowed it becomes tougher to control, as much of the available leaf surface has been removed. In areas without a killing frost, some annuals can over-winter after having been mowed multiple times. These grasses form large crowns and may contain many viable buds. These grasses, even though they may be an annual grass, may require repeated application of VAQUERO for partial or complete control.

Irrigated Alfalfa and Mint: In established alfalfa and mint, irrigation practices can be very critical to the successful use of VAQUERO and may be necessary to initiate active growth of the weeds prior to application. Generally applications 2-4 days following irrigation are most effective. More consistent grass control occurs when the irrigation occurs before the application is made but irrigation shortly after application (2 days) can be effective.

Aerial Application: Apply VAQUERO in a minimum of 10 GPA in established alfalfa and mint when applying by air.

Annual Grass Control: Apply VAQUERO at the grass sizes indicated in the Use Directions for Annual Grass Table and rates indicated above (10-16 fl. oz./A). If a grass has been cut, apply VAQUERO after active growth has resumed and regrowth has reached the minimum height and before it reaches the maximum height indicated. Apply before the alfalfa/mint canopy covers the grasses and interferes with the spray coverage. Some annual grasses are spring and summer germinating plants, while others are fall germinating plants, and the time they are actively growing and most susceptible to VAQUERO may vary from region to region. Also some annuals germinate over an extended period of time, and because control of small grasses is desired, applications after each weed flush may be required. As a general rule, spray spring and summer germinating grasses as early in the season as possible, after initial green-up. Spray fall germinating weeds in the fall soon after they begin growing but before any damage is done due to frost. Late fall applications may be less effective due to environmental conditions, such as frost, slower plant growth, or the onset of flowering.

Perennial Grass Control: VAQUERO effectively controls perennial grasses such as bermudagrass, Johnsongrass, quackgrass, wirestem muhly, tall fescue, foxtail barley and orchardgrass. Due in part to lack of tillage, perennial grasses are more difficult to control in a perennial crop such as established alfalfa or mint. A program of repeated applications is usually necessary for best results. The best way to control perennial grasses is to do so in the year of stand establishment before rhizomes and stolons become large and difficult to kill.

Use the high rate when grasses are at or near maximum height and/or under heavy grass pressure. Always add a crop oil concentrate at 1 qt./A by ground or 1% v/v (but not less than 1 pt./A) to the finished spray volume by air.

TABLE 9: DIRECTIONS FOR REDUCED RATE TO CONTROL SMALL ANNUAL GRASSES IN CANOLA, DRY BEAN AND DRY PEA (INCLUDING SOYBEANS), EDIBLE PODDED LEGUME VEGETABLES, FLAX, MUSTARD SEED, SUCCULENT BEAN AND PEA AND SUGARBEET

- Make applications only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Regrowth by tillering may occur if application is made when plants are stressed by lack of moisture, excessive moisture, and low temperatures and/or under very low humidity.

Grass Species	Scientific Name	Weed Height (inches)	Rate (fl. oz./A) ⁽¹⁾
Barnyardgrass	<i>Echinochloa crus-galli</i>	1-4	4
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	1-4	5
Crabgrass			
Large	<i>Digitaria sanguinalis</i>	1-3*	4
Large	<i>Digitaria sanguinalis</i>	1-4*	5
Smooth	<i>Digitaria ischaemum</i>	1-3*	4
Smooth	<i>Digitaria ischaemum</i>	1-4*	5
Southern	<i>Digitaria ciliaris</i>	1-4*	5
Fall Panicum	<i>Panicum dichotomiflorum</i>	1-4	4
Foxtail			
Giant	<i>Setaria faberi</i>	1-4	4
Green	<i>Setaria viridis</i>	1-4	4
Millet	<i>Setaria italic</i>	1-4	5
Yellow	<i>Setaria glauca</i>	1-4	4
Seedling Johnsongrass	<i>Sorghum halepense</i>	1-6	5
Shattercane	<i>Sorghum bicolor</i>	4-10	4
Texas Panicum	<i>Panicum texanum</i>	1-4	5
Volunteer Cereals			
Barley	<i>Hordeum vulgare</i>	1 - 4	5
Oats	<i>Avena sativa</i>	1 - 4	5
Wheat	<i>Triticum aestivum</i>	1 - 4	5
Volunteer Corn**	<i>Zea mays</i>	4-12	2
Wild Oats	<i>Aven fatua</i>	1-4	5
Wild Proso Millet	<i>Panicum miliaceum</i>	1-6	4

* Length of lateral growth

** Not sethoxydim resistant corn

(1) Always add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.

TANK MIXES

The labels for each of the pesticides recommended for tank mixing with VAQUERO are unique to the characteristics of those products and contain restrictions and limitations that may be more restrictive than the VAQUERO label in certain considerations. These may include, but are not limited to:

1. Geographic restrictions – not all products are registered for use in all areas and rates may vary from one region of labeled use to another
2. Crop rotation restrictions
3. Applicator certification requirements
4. Worker safety rules (i.e., protective clothing requirements, reentry time)
5. Soil type or soil characteristics

6. Maximum application rate or number of applications allowed per year
7. Rain-free period required
8. Application timing (E.G., PRE-HARVEST INTERVAL)
9. Do not exceed the total yearly rates.

THE MOST RESTRICTIVE LABELING OF ANY PRODUCT USED IN A TANK MIX MUST BE FOLLOWED.

TANK MIX APPLICATION OF VAQUERO AND BROADLEAF HERBICIDES FOR CONTROL OF GRASSES AND BROADLEAF WEEDS

- Apply only to actively growing grass and broadleaf weeds at recommended height or growth stage listed on each label.
- Apply when the first grass or broadleaf weed species in a mixed population reaches the recommended height or growth stage for treatment.
- Apply under favorable soil moisture and humidity, which exist a few days after rainfall or within seven days after irrigation.
- Always add the appropriate adjuvant to the spray mix at the rate recommended for each specific tank mix combination.
- Tank mix applications may sometimes result in reduced grass control and possible increases in crop injury as compared to either product used alone. If regrowth occurs, or an additional flush of new grass emerges, make a second application of VAQUERO as specified in the respective size and rate tables.
- Do not tank mix VAQUERO when broadleaf weeds are tall and/or dense enough to prevent proper grass coverage.

MIXING INSTRUCTIONS

Use the jar test to verify mixing and compatibility properties. Maintain agitation throughout the spray application. Unsatisfactory weed control may result due to improper mixing if continuous agitation is not maintained during application.

VAQUERO MIXING INSTRUCTIONS:

1. Fill clean spray tank 1/2-2/3 of desired level with clean water
2. While agitating, add the specified amount of VAQUERO post-emergence grass herbicide. Agitation should be vigorous enough to be visible on the surface of the water.
3. If tank mixing VAQUERO with other labeled herbicides, add water soluble packets first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
4. Add any required adjuvants (NIS, COC/MSO, and/or nitrogen or AMS solution).
5. Add any drift reduction products, such as IN-PLACE or CROSSHAIR.
6. Finish filling spray tank to the desired level with water. Agitation should continue until the spray solution has been applied in its entirety.

INFORMATION ON ANTAGONISM

Tank mixes of VAQUERO with post-emergence broadleaf herbicides have shown some reduction or failure to control certain grass species which would have otherwise been controlled when VAQUERO is applied alone. Activity of the post-emergence broadleaf herbicide in the tank mix is not affected.

DIRECTIONS FOR MICRO-RATE APPLICATIONS TO SUGARBEETS

Multiple micro-rate applications of VAQUERO in tank mixtures will reduce rates of Betanex® or Betamix® and methylated seed oils may be applied by air or ground equipment to sugarbeets to control early germinating annual grasses listed above. The rate of Betanex or Betamix must not exceed 0.12 lb. ai/A (broadcast application) when in combination with these spray adjuvants. Note that maximum rate allowed varies depending on crop growth stage. The use of wetting agents or spray adjuvants with conventional rates (0.73-1.22 lb. ai/A) or multiple low rate (0.24-0.73 lb. ai/A) applications of Betanex or Betamix is prohibited on the Betanex or Betamix master label. Favorable climatic conditions (good conditions for plant growth and development) are essential for adequate weed control. All use precautions and restrictions on the Betanex or Betamix master labels must be followed.

DIRECTIONS FOR MICRO-RATE MULTIPLE APPLICATIONS OF VAQUERO TANK MIXES TO SUGARBEETS

Apply VAQUERO in broadcast applications only at a rate of 2-3 fl. oz./A in tank mixtures with either Betanex or Betamix following the directions for use on the tank mix partner label. A minimum of 3 sequential applications of 2 fl. oz./A or a minimum of 2 sequential applications of 3 fl. oz./A should be utilized for VAQUERO tank mixtures. A minimum of 3 sequential applications of Betanex or Betamix should be used. Accurate timing is essential; make initial application immediately after weeds emerge, and make repeat applications on 5 - 7 day intervals. If weed control is not adequate due to climatic conditions, spray coverage or other factors, return to conventional application rates of VAQUERO (6 - 8 fl. oz./A) and add rates of Betanex or Betamix in tank mixtures with VAQUERO. A spray adjuvant is not recommended.

USE PRECAUTIONS FOR MICRO-RATE APPLICATIONS: (SEE VAQUERO, BETANEX AND BETAMIX MASTER LABEL FOR FURTHER USE PRECAUTIONS)

Not all weeds will be adequately controlled, even with favorable climatic conditions. Conventional rate of VAQUERO, Betanex or Betamix and/or hand labor may be required if multiple micro-rate applications do not adequately control weeds. Plugging of spray nozzles may be encountered due to the potential for formation of a precipitate in the spray solution that is often associated with micro-rate applications. Wilbur-Ellis Co. will not be responsible for any nozzle plugging that may occur with the use of multiple micro-rate applications. Methylated seed oils must not be added if the Betanex or Betamix rate exceeds 0.12 lb. ai/A broadcast, as the addition of methylated seed oils could increase the possibility of crop injury at dosage rates greater than 0.12 lb. ai/A.

GROUND APPLICATION

Use of sufficient spray volumes and pressure is essential to ensure complete coverage. Use a minimum of 10 gallons and a maximum of 20 gallons of spray solution per acre. Spray pressures should reflect a minimum of 30 psi and a maximum of 60 psi at the nozzle. Do not use flood nozzles.

AERIAL APPLICATION

Use of sufficient spray volumes is essential to ensure complete coverage. Use a minimum of 5 gallons and a maximum of 15 gallons of spray solution per acre.

DIRECTIONS FOR USE IN FALLOW LAND

VAQUERO may be used to control annual and perennial grasses in land that has been left fallow the previous year and other non-producing agricultural areas. Apply VAQUERO at 6 - 8 fl. oz./A for annual grasses and 8 - 16 fl. oz./A for perennial grasses. When both grass and broadleaf weeds are the target pest, VAQUERO may be tank mixed with 2,4-D ester, Dicamba[®] SG or Banvel[®] SGF Herbicide, or other broadleaf herbicides for broad-spectrum control. When both annual and perennial grasses occur in the same field, use a minimum of 8 fl. oz./A VAQUERO rate.

- Use a minimum spray volume of 15 gallons/A for ground applications and 5 gallons/A for aerial applications.
- Apply only to actively growing grasses when the first grass reaches the recommended weed height as specified by the Use Directions for Annual and Perennial Grasses section of this label.
- Annual grasses which emerge after the VAQUERO application will not be controlled, and a second application may be necessary.
- The control of perennial grasses may require more than one application in non-tilled areas.
- Do not plant any crop for 30 days after application unless clethodim is registered for use in that crop.
- Do not apply to grasses that have tillered, formed seedheads or exceeded recommended growth stage.
- Do not use flood jet nozzles.
- Do not apply to drought-stressed grasses.
- Do not mow area for two weeks prior to or after VAQUERO application.

TABLE 10: VAQUERO IN TANK MIXES TO CONTROL ANNUAL AND PERENNIAL GRASSES IN FALLOW LAND

Product	Application Rates/Acre ⁽¹⁾		Crop Oil Concentrate ⁽²⁾	
	Annual Grasses	Perennial Grasses	Ground	Air
VAQUERO + 2,4-D ester or Dicamba	6 - 8 fl. oz.	8 - 16 fl. oz.	1% v/v	
	0.5 lb./A			
	See the Albaugh Dicamba SG or Banvel SGF label for rates.			

1. Refer to VAQUERO label for weed height and species control. Review the Dicamba Herbicide and 2,4-D labels for crop restrictions, use rates and weeds controlled.
2. Always use a crop oil concentrate or methylated seed oil containing at least 15% emulsifier at the listed rate (but not less than 1 pt./A) in the finished spray volume.

TABLE 11: DIRECTIONS FOR GRASS SUPPRESSION IN NON-CROP AREAS WITH VAQUERO

Grass Species	Weed Stage	Rate fl.oz./A	High Rate
Annual and perennial grasses that exceed height claimed for control on height charts above.	Up to and including grasses in the seed head stage.	12	16
Do not apply as part of a tank mix when applying VAQUERO for grass suppression. Add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.			

TABLE 12: DIRECTIONS FOR THE CONTROL AND/OR SUPPRESSION OF TALL FESCUE IN NATIVE PRAIRIE, WARM-SEASON, GRASS RESTORATION PROJECTS

Product	Product Rates	Grass Weeds Controlled/Suppressed		Weed Stages
		Common Name	Scientific Name	
VAQUERO	10 - 12 fl. oz./A	Tall Fescue	<i>Festuca arundinacea</i>	4 - 6 inches (40 - 60% green-up)

SPECIAL APPLICATION INSTRUCTIONS

- Burn or mow fields a minimum of 3 weeks prior to application to remove excess crop residue. Apply in the spring, at 40-60% green-up, prior to emergence of warm-season grasses. Do not mow area for 2 weeks after the VAQUERO application.
- Apply in a minimum of 15-20 gallons of water per acre at a spray pressure of 40-60 psi at the nozzle. Apply using flat fan or hollow cone nozzles. Do not use flood nozzles.
- Apply only to fields that have warm-season grasses established for two years. Applications of VAQUERO to emerged warm-season grasses may cause injury. Do not apply to warm-season grasses grown for seed.
- Use NIS at 0.25% v/v or COC/MSO at 1.0 qt./A or 1.0% v/v and AMS at 2.5-4.0 lb./A.
- Use of a non-ionic surfactant and AMS may reduce the risk of crop response or injury compared to COC or MSO adjuvants.
- Do not graze treated fields or feed treated forage and or hay to livestock. Do not plant any crop for 30 days after application, unless clethodim is registered for use in that crop.
- **NOTE:** VAQUERO applications are most effective if applied when average nighttime temperatures are consistently greater than or equal to 47°F.

**TABLE 13: DIRECTIONS FOR THE SUPPRESSION OF TALL FESCUE SEED-HEADS
IN NON-PRODUCING AGRICULTURAL AREAS**

Product	Product Rate	Suppression	Application Timing
VAQUERO	1.5-2 fl. oz./A	Tall Fescue Seed-Heads <i>Festuca arundinacea</i>	50-90% Tall Fescue green-up
Adjuvant: VAQUERO must be applied with crop oil concentrate at 1 qt./A, plus a spray grade ammonium sulfate at 2.5-4 lb./A. Recommended Mixing Order: Thoroughly mix spray grade ammonium sulfate in water, add VAQUERO, then add crop oil concentrate.			

SPECIAL APPLICATION INSTRUCTIONS

- Apply at 50-90% tall fescue green-up.
- Use the higher VAQUERO rate if less tall fescue green matter is present.
- Do not mow area for two weeks after the VAQUERO application.
- Apply in a minimum of 15-20 gallons of water per acre at a spray pressure of 40-60 psi at the nozzle. Apply using flat fan or hollow cone nozzles. Do not use flood nozzles.
- 2,4-D ester may be added to this tank mix for broadleaf control (see the 2,4-D ester label for weeds controlled).
- Do not graze treated fields or feed treated forage and/or hay to livestock. Do not plant any crop for 30 days after application, unless clethodim is registered for use in that crop.

ORNAMENTALS: DIRECTIONS FOR USE

For ornamental plant uses, VAQUERO can be used to control labeled grass weeds in greenhouses, lathhouses, shadehouses, and around outdoor ornamentals, including nurseries, parks, roadside plantings, and structure landscapes.

IMPORTANT: VAQUERO successfully controls weeds in newly transplanted and established non-grassy ornamentals. Plant tolerance to VAQUERO at labeled rates has been found to be acceptable for the indicated genera and species listed below. Due to variability within species, crop growth stage, environmental conditions, and application techniques, it is recommended that the user determine if herbicide can be used safely on a few plants prior to widespread application. Neither the seller nor the manufacturer of VAQUERO have investigated the safety factor to ornamental plants not listed on the label.

The following plants have shown a tolerance for VAQUERO applications:

**TABLE 14: TOLERANT PLANTS
ORNAMENTAL TREES**

Common Name	Scientific Name
Alder, red	<i>Alnus oregona</i>
Ash	<i>Fraxinus spp.</i>
Basswood	<i>Tilia spp.</i>
Birch, European white	<i>Betula pendula</i>
Birch, river	<i>Betula nigra</i>
Birch, white	<i>Betula papyrifera</i>
Crabapple, flowering	<i>Malus halliana</i>
Dogwood, flowering	<i>Cornus, florida</i>
Golden chain tree	<i>Labumum anagyroides</i>
Maples	<i>Acer spp.</i>
Mulberry, white	<i>Morus alba</i>
Oaks	<i>Quercus spp.</i>
Olive, wild	<i>Elaeagnus angustifolia</i>
Redbud	<i>Cercis canadensis</i>
Sweet gum, American	<i>Liquidambar styraciflua</i>

GARDEN FLOWERS AND PLANTS

Common Name	Scientific Name
Ageratum	<i>Ageratum spp.</i>
Alyssum*, Sweet	<i>Lobularia maritime</i>
Asparagus fern	<i>Asparagus setaceus</i>
Bleeding heart	<i>Dicentra spectabilis</i>
Cast iron plant	<i>Aspidistra alatiior</i>
Chrysanthemum	<i>Chrysanthemum spp.</i>
Cinquefoil	<i>Potentilla spp.</i>
Coleus	<i>Coleus spp.</i>
Coralbells	<i>Heuchera sanguinea</i>
Cranesbill	<i>Geranium spp.</i>
Dahlia	<i>Dahlia spp.</i>
Daisy, Trailing African	<i>Osteospermum fruticosum</i>
Daylily	<i>Hemerocallis spp.</i>
Dusty miller	<i>Senecio cinerarie</i>
Euonymus	<i>Euonymus spp.</i>
Gazania	<i>Gazania spp.</i>
Geranium, house	<i>Pelargonium hortorum</i>
Heather, False	<i>Cuphea hyssopifolia</i>
Hosta	<i>Hosta fortunei</i>
Iris	<i>Iris spp.</i>
Jasmine tobacco	<i>Nicotiana alata</i>
Loosestrife	<i>Lythrum salicaria</i>
Marigold	<i>Tagetes spp.</i>
Partridgeberry	<i>Mitchella rapens</i>
Petunia*	<i>Petunia hybride</i>
Phlox	<i>Phlox spp.</i>
Pinks	<i>Dianthus spp.</i>
Portulaca	<i>Portulaca grandiflora</i>
Salvia	<i>Salvia spp.</i>
Saxifrage	<i>Saxifraga spp.</i>
Sedum	<i>Sedum spp.</i>
Selloum	<i>Philodendron selloum</i>
Snapdragon*	<i>Antirrhinum majus</i>
Sweet flag	<i>Acorus gramineus</i>
Tickseed	<i>Coreopsis grandiflora</i>
Touch-me-not	<i>Impatiens spp.</i>
Verbena	<i>Verbena spp.</i>
Violet	<i>Viola spp.</i>
Yarrow, common	<i>Achillea millefolium</i>
Zinnia	<i>Zinnia elegans</i>

*Slight foliage or flower speckling has been observed on these species.

GROUND COVERS

Common Name	Scientific Name
Bugleweed, carpet	<i>Ajuga reptans</i>
Ivy, English	<i>Hedera helix</i>
Japanese spurge	<i>Pachysandra terminalis</i>
Lilyturf	<i>Liriope muscari</i>
Moneywort	<i>Lysimachia nummularia</i>
Mondo grass, white	<i>Ophiopogon jaburan</i>
Mondo grass, dwarf	<i>Ophiopogon japonicus</i>
Periwinkle, common	<i>Vinca minor</i>

SHRUBS

Common Name	Scientific Name
Abelia	<i>Abelia spp.</i>
Anise, purple	<i>Illicium floridenum</i>
Aucuba	<i>Aucuba spp.</i>
Azalea*	<i>Rhododendron spp.</i>
Bamboo	<i>Bambusa spp.</i>
Barberry, Japanese	<i>Berberis thunbargii</i>
Barberry, Magellan	<i>Berberis buxifolia</i>
Baryberry	<i>Myrica pensylvanica</i>
Bottlebrush	<i>Callistemon citrinus</i>
Boxwood, Common	<i>Buxus sempervirens</i>
Camellia, Common	<i>Camellia japonica</i>
Candytuft	<i>Iberis sempervirens</i>
Cleyera	<i>Cleyera japonica</i>
Coralberry	<i>Ardisia crenata</i>
Crape myrtle	<i>Lagerstroemia indica</i>
Coyote brush	<i>Baccharis pilularis</i>
Fig, creeping	<i>Ficus pumila</i>
Gardenia	<i>Gardenia spp.</i>
Holly	<i>Ilex spp.</i>
Honeysuckle	<i>Lonicera pileate</i>
Indian hawthorn	<i>Raphiolepis indica</i>
Jasmine	<i>Jasminum spp.</i>
Jasmine, Asiatic	<i>Trachelospermum asiaticum</i>
Jasmine, Star	<i>Trachelospermum jasminoides</i>
Juniper	<i>Juniperus spp.</i>
Lantana	<i>Lantana spp.</i>
Nandina *, Bamboo Heavenly	<i>Nandinia domestica</i>
Oleander, common	<i>Nerium oleander</i>
Oregon grape	<i>Mahonia aquifolium</i>
Photina	<i>Photina spp.</i>
Pittosporum	<i>Pittosporum spp.</i>
Podocarpus	<i>Podocarpus spp.</i>
Privet	<i>Ligustrum spp.</i>
Pyracantha	<i>Pyracantha spp.</i>
Rhododendron	<i>Rhododendron spp.</i>
Rose	<i>Spirea bumalda</i>
Sweet olive	<i>Osmanthus fragrans</i>
Viburnum	<i>Viburnum tinus</i>
Wisteria	<i>Wisteria spp.</i>
Yellow sage/Shrub Verbena	<i>Lantana camere</i>

*Slight foliage or flower speckling has been observed on these species.

TABLE 15: DIRECTIONS FOR CONTROL OF ANNUAL GRASSES IN ORNAMENTALS

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.

Grass Species	Scientific Name	Weed* Height (inches)	Rate (fl. oz./A) ⁽¹⁾	High Rate ⁽²⁾
Barnyardgrass	<i>Echinochloa crus-galli</i>	2-8	8	16
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	2-6	8	16
Brome				

Grass Species	Scientific Name	Weed* Height (inches)	Rate (fl. oz./A) ⁽¹⁾	High Rate ⁽²⁾
California	<i>Bromus carinatus</i>	2-6	8	16
Cheatgrass	<i>Bromus secalinus</i>	2-6	8	16
Downy	<i>Bromus tectorum</i>	2-6	8	16
Ripgut	<i>Bromus diandrus</i>	2-6	8	16
Canarygrass	<i>Phalaris canariensis</i>	1-4	8	16
Crabgrass				
Hairy	<i>Digitaria adscendens</i>	2-6**	8	16
Large	<i>Digitaria sanguinalis</i>	2-6**	8	16
Smooth	<i>Digitaria ischaemum</i>	2-6**	8	16
Southern	<i>Digitaria ciliaris</i>	2-6**	8	16
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	2-6**	8	16
Fall Panicum	<i>Panicum dichotomiflorum</i>	2-8	8	16
Field Sandbur	<i>Cenchrus incertus</i>	2-6	8	16
Foxtail				
Giant	<i>Setaria faberi</i>	2-12	8	16
Green	<i>Setaria viridis</i>	2-8	8	16
Yellow	<i>Setaria glauca</i>	2-8	8	16
Foxtail Barley	<i>Hordeum jubatum</i>	2-6	8	16
Goosegrass	<i>Eleusine indica</i>	2-6**	8	16
Itchgrass	<i>Rottboellia exaltata</i>	2-6	8	16
Junglerice	<i>Echinochloa colona</i>	2-6	8	16
Lovegrass (Stinkgrass)	<i>Eragrostis cilianensis</i>	2-6	8	16
Rabbitsfootgrass	<i>Polypogon monspeliensis</i>	1-4	8	16
Red Rice	<i>Oryza sativa</i>	1-3	8	16
Ryegrass				
Hardy	<i>Lolium remotum</i>	2-6	8	16
Italian	<i>Lolium multiflorum</i>	2-6	8	16
Seedling Johnsongrass	<i>Sorghum halepense</i>	4-10	8	16
Shattercane	<i>Sorghum bicolor</i>	6-18	8	16
Southwestern Cupgrass	<i>Eriochloa gracillis</i>	2-6	8	16
Sprangletop				
Amazon	<i>Leptochloa panicoides</i>	2-6	8	16
Bearded	<i>Leptochloa fascicularis</i>	2-6	8	16
Mexican	<i>Leptochloa uninervia</i>	2-6	8	16
Red	<i>Leptochloa filiformis</i>	2-6	8	16
Texas Panicum	<i>Panicum texanum</i>	2-6	8	16
Volunteer Cereals				
Barley	<i>Hordeum vulgare</i>	2-6	8	16
Oats	<i>Avena sativa</i>	2-6	8	16
Rye	<i>Secale cereale</i>	2-6	8	16
Wheat	<i>Triticum aestivum</i>	2-6	8	16
Volunteer Corn	<i>Zea mays</i>	4-12	6	8
Volunteer Corn	<i>Zea mays</i>	12-24	8	16
Volunteer Grain Sorghum	<i>Sorghum bicolor</i>	8-12	8	16
Wild Oats	<i>Aven fatua</i>	2-6	8	16
Wild Proso Millet	<i>Panicum miliaceum</i>	2-10	8	16
Witchgrass	<i>Panicum capillare</i>	2-8	8	16
Woolly Cupgrass	<i>Eriochloa villosa</i>	2-8	8	16

*Generally occurs between 3-leaf stage and tillering.

**Length of lateral growth.

(1) 8 fl. oz./A = approximately 0.2 fl. oz./1,000 sq. ft.

(2) 16 fl. oz./A = approximately 0.4 fl. oz./1,000 sq. ft.

Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gallons (0.25% v/v).

TABLE 16: DIRECTIONS FOR CONTROL OF ANNUAL BLUEGRASS IN ORNAMENTALS

Grass Species	Scientific Name	Weed Stage	Rate (fl. oz./A)	High Rate
Annual Bluegrass	<i>Poa annua</i>	To 4-Leaf	6	16
Apply under favorable soil moisture and humidity which exists within a few days after rainfall or within 7 days after irrigation. Grass needs to be actively growing at time of application(s). Apply at weed stage indicated on the label, as reduced control can be expected with more mature annual bluegrass. Use the high rate under heavy grass pressure and/or when annual bluegrass is more mature. Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gallons (0.25% v/v).				

TABLE 17: DIRECTIONS FOR CONTROL OF PERENNIAL GRASSES IN ORNAMENTALS

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.

Grass Species	Scientific Name	Weed Height (inches)	Rate (fl. oz./A) ⁽¹⁾	High Rate
Bermudagrass (<i>Cynodon dactylon</i>)				
First Application		3 (or up to 6" runners)	8	16
Repeat Application(s) (if regrowth occurs)		3 (or up to 6" runners)	8	16
Quackgrass (<i>Elytrigia repens</i>)				
First Application		4-8	8	16
Repeat Application(s) (if regrowth occurs)		4-8	8	16
Rhizome Johnsongrass (<i>Sorghum halepense</i>)				
First Application		12-24	8	16
Repeat Application(s) (if regrowth occurs)		6-18	6	8
Wirestem Muhly (<i>Muhlenbergia frondosa</i>)				
First Application		4-8	8	16
Repeat Application(s) (if regrowth occurs)		4-8	8	16

(1) 8 fl. oz./A = approximately 0.2 fl. oz./1,000 sq. ft.

16 fl. oz./A = approximately 0.4 fl. oz./1,000 sq. ft.

Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gallons (0.25% v/v).

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

PESTICIDE STORAGE: Store in a cool, dry place in original container.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of onsite or at an approved waste disposal facility.

CONTAINER HANDLING:

Non-refillable containers (< 5 gallons):

Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container $\frac{1}{4}$ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Non-refillable containers (> 5 gallons):

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container $\frac{1}{4}$ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows:

Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable container (bulk):

Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from the container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing process two more times.

Conditions of Sale and Limitation of Warranty and Liability:

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using the product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

ALL STATEMENTS MADE HEREIN ARE SUBJECT TO APPLICABLE LAW, AND TO THE EXTENT THERE IS ANY INCONSISTENCY OR CONTENTION, APPLICABLE LAW SHALL GOVERN.

The Directions for Use of the product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of many different factors including, without limitation, manner of use or application, weather, combination with other products, or crop conditions. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold Manufacturer and Seller harmless from any claims relating to such factors.

Seller warrants that this product conforms to the chemical description on the label. EXCEPT FOR THIS WARRANTY, THE PRODUCT IS FURNISHED "AS-IS", AND NEITHER SELLER NOR MANUFACTURER MAKES ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE SELECTION, PURCHASE OR USE OF THIS PRODUCT; SELLER AND MANUFACTURER SPECIFICALLY DISCLAIM ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE BEYOND WHAT IS STATED ON THE LABEL. Buyer and User accept all risks arising from any use of this product, including without limitation, uses contrary to label instructions, or under conditions not reasonably foreseeable to (or beyond the control of) Seller or Manufacturer.

Neither Manufacturer nor Seller shall be liable for any incidental, consequential or special damages resulting from the use or handling of this product. THE EXCLUSIVE REMEDY OF THE BUYER OR USER, AND THE EXCLUSIVE LIABILITY OF MANUFACTURER AND SELLER, FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THIS PRODUCT, OR, AT THE ELECTION OF MANUFACTURER OR SELLER, THE REPLACEMENT OF THE PRODUCT.

These Conditions of Sale and Limitation of Warranty and Liability shall be interpreted, unless otherwise required by the law of the state of purchase, in accordance with the laws of the State of California, excluding its conflicts of laws rules, and may not be amended by any oral or written agreement.

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NET CONTENTS: 2.5 gallons